



# ecology and environment, inc.

Global Environmental Specialists

720 Third Avenue, Suite 1700

Seattle, Washington 98104

Tel: (206) 624-9537, Fax: (206) 621-9832

## MEMORANDUM

DATE: August 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington *MW*

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-22

REF: TDDs: 12-05-0006                      PANs: 002233.0790.01RA  
              12-05-0007                      PANs: 002233.0791.01RA  
              12-05-0008                      PANs: 002233.0792.01RA  
              12-05-0009                      PANs: 002233.0793.01RA

The data quality assurance review of two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered:    12060078            12060079

### Data Qualifications:

#### **1. Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on July 23, 2012, and were analyzed by July 26, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

#### **2. Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

#### **3. Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within QC limits.

**4. Continuing Calibration: Satisfactory.**

All RRFs were within the QC limits. All % differences were within the QC limits except carbon tetrachloride with an increasing response factor in the 7-25 continuing calibration; no action was taken based on this outlier as it was not detected in any sample.

**5. Blanks: Acceptable.**

A method blank was analyzed for each 20 sample batch per matrix. There were no detections in any method blank.

**6. System Monitoring Compounds (SMCs): Satisfactory.**

All SMC recoveries were within QC limits except bromofluorobenzene in sample 12060078 with a high recovery; no action was taken as there were no associated positive results in sample 12060078.

**7. Blank Spike (BS)/BS Duplicate (BSD) Analysis: Acceptable.**

BS and BSD analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within QC limits.

**8. Duplicate Analysis: Acceptable.**

Laboratory spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All duplicate results were within QC limits.

**9. Internal Standards: Satisfactory.**

All internal standards were within  $\pm 30$  seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts except chlorobenzene in sample 12060078 and chlorobenzene and 1,4-dichlorobenzene in sample 12060079, all with low area counts; associated sample results were qualified as estimated quantities with a low bias (JL or UJL).

**10. Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

**11. Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

**12. Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

## Data Qualifiers and Definitions

- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.
- JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.
- JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.
- JQ - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
- NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Ecology and Environment, Inc.  
Address : 720 Third Ave  
Suite 1700  
Seattle, Washington 98104  
Contact: Mr. Steve Hall  
Project: Project No. 4500000347

Report Date: July 27, 2012

Client Sample ID: 12060078  
Sample ID: 308397003  
Matrix: Soil  
Collect Date: 23-JUL-12 08:30  
Receive Date: 24-JUL-12  
Collector: Client

Project: ECOL00801  
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Volatile Organics</b>										
<i>5035/8260B TCL in Solid "As Received"</i>										
1,1,1-Trichloroethane	U	ND	0.847	ug/kg	1	JEB	07/25/12	2247	1232783	1
1,1,2,2-Tetrachloroethane	U	ND	0.847	ug/kg	1					
1,1,2-Trichloroethane	U	ND	0.847	ug/kg	1					
1,1-Dichloroethane	U	ND	0.847	ug/kg	1					
1,1-Dichloroethylene	U	ND	0.847	ug/kg	1					
1,2-Dichloroethane	U	ND	0.847	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	1.69	ug/kg	1					
1,2-Dichloropropane	U	ND	0.847	ug/kg	1					
2-Butanone	U	ND	4.24	ug/kg	1					
2-Hexanone	U	ND	4.24	ug/kg	1					
4-Methyl-2-pentanone	U	ND	4.24	ug/kg	1					
Acetone		15.7	4.24	ug/kg	1					
Benzene	U	ND	0.847	ug/kg	1					
Bromodichloromethane	U	ND	0.847	ug/kg	1					
Bromoform	U	ND	0.847	ug/kg	1					
Bromomethane	U	ND	0.847	ug/kg	1					
Carbon disulfide	U	ND	4.24	ug/kg	1					
Carbon tetrachloride	U	ND	0.847	ug/kg	1					
Chlorobenzene	U	ND	0.847	ug/kg	1					
Chloroethane	U	ND	0.847	ug/kg	1					
Chloroform	U	ND	0.847	ug/kg	1					
Chloromethane	U	ND	0.847	ug/kg	1					
Dibromochloromethane	U	ND	0.847	ug/kg	1					
Ethylbenzene	U	ND	0.847	ug/kg	1					
Methylene chloride	U	ND	4.24	ug/kg	1					
Styrene	U	ND	0.847	ug/kg	1					
Tetrachloroethylene	U	ND	0.847	ug/kg	1					
Toluene	U	ND	0.847	ug/kg	1					
Trichloroethylene	U	ND	0.847	ug/kg	1					
Vinyl acetate	U	ND	4.24	ug/kg	1					
Vinyl chloride	U	ND	0.847	ug/kg	1					
Xylenes (total)	U	ND	2.54	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.847	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.847	ug/kg	1					
m,p-Xylenes	U	ND	1.69	ug/kg	1					
o-Xylene	U	ND	0.847	ug/kg	1					
tert-Butyl methyl ether	U	ND	0.847	ug/kg	1					
trans-1,2-Dichloroethylene	U	ND	0.847	ug/kg	1					

8/6/12

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Ecology and Environment, Inc.  
Address : 720 Third Ave  
Suite 1700  
Seattle, Washington 98104  
Contact: Mr. Steve Hall  
Project: Project No. 4500000347

Report Date: July 27, 2012

Client Sample ID: 12060078  
Sample ID: 308397003

Project: ECOL00801  
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	-------	----	---------	------	------	-------	--------

### Volatile Organics

5035/8260B TCL in Solid "As Received"

trans-1,3-Dichloropropylene ~~U~~ ~~ND~~ *me*

0.847 *U* ug/kg

1

*S4VM*

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	JEB	07/24/12	1425	1232782

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "As Received"	46.7 ug/kg	50.0	110	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "As Received"	90.7 ug/kg	50.0	214*	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "As Received"	50.8 ug/kg	50.0	120	(80%-120%)

### The Following NCRs have been identified

NCR ID:1104042 Batch ID: 1232783 1. Samples 308397003 and 308397004 did not pass surrogate recoveries.

2. Samples 308397003 and 308397004 did not have acceptable internal standard responses.

*MW 8-6-12*

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : Ecology and Environment, Inc.  
Address : 720 Third Ave  
Suite 1700  
Seattle, Washington 98104  
Contact: Mr. Steve Hall  
Project: Project No. 4500000347

Report Date: July 27, 2012

Client Sample ID: 12060079  
Sample ID: 308397004  
Matrix: Soil  
Collect Date: 23-JUL-12 08:45  
Receive Date: 24-JUL-12  
Collector: Client

Project: ECOL00801  
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Volatile Organics</b>										
5035/8260B TCL in Solid "As Received"										
1,1,1-Trichloroethane	U	ND	0.893	ug/kg	1	JEB	07/26/12	2233	1232783	1
1,1,2,2-Tetrachloroethane	U	ND	0.893	ug/kg	1					
1,1,2-Trichloroethane	U	ND	0.893	ug/kg	1					
1,1-Dichloroethane	U	ND	0.893	ug/kg	1					
1,1-Dichloroethylene	U	ND	0.893	ug/kg	1					
1,2-Dichloroethane	U	ND	0.893	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	1.79	ug/kg	1					
1,2-Dichloropropane	U	ND	0.893	ug/kg	1					
2-Butanone	U	ND	4.46	ug/kg	1					
2-Hexanone	U	ND	4.46	ug/kg	1					
4-Methyl-2-pentanone	U	ND	4.46	ug/kg	1					
Acetone		10.7	4.46	ug/kg	1					
Benzene	U	ND	0.893	ug/kg	1					
Bromodichloromethane	U	ND	0.893	ug/kg	1					
Bromoform	U	ND	0.893	ug/kg	1					
Bromomethane	U	ND	0.893	ug/kg	1					
Carbon disulfide	U	ND	4.46	ug/kg	1					
Carbon tetrachloride	U	ND	0.893	ug/kg	1					
Chlorobenzene	U	ND	0.893	ug/kg	1					
Chloroethane	U	ND	0.893	ug/kg	1					
Chloroform	U	ND	0.893	ug/kg	1					
Chloromethane	U	ND	0.893	ug/kg	1					
Dibromochloromethane	U	ND	0.893	ug/kg	1					
Ethylbenzene	U	ND	0.893	ug/kg	1					
Methylene chloride	U	ND	4.46	ug/kg	1					
Styrene	U	ND	0.893	ug/kg	1					
Tetrachloroethylene	U	ND	0.893	ug/kg	1					
Toluene	U	ND	0.893	ug/kg	1					
Trichloroethylene	U	ND	0.893	ug/kg	1					
Vinyl acetate	U	ND	4.46	ug/kg	1					
Vinyl chloride	U	ND	0.893	ug/kg	1					
Xylenes (total)	U	ND	2.68	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.893	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.893	ug/kg	1					
m,p-Xylenes	U	ND	1.79	ug/kg	1					
o-Xylene	U	ND	0.893	ug/kg	1					
tert-Butyl methyl ether	U	ND	0.893	ug/kg	1					
trans-1,2-Dichloroethylene	U	ND	0.893	ug/kg	1					

SHM

Mu 8612

**GEL LABORATORIES LLC**

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**Certificate of Analysis**

Company : Ecology and Environment, Inc.  
Address : 720 Third Ave  
Suite 1700  
Seattle, Washington 98104  
Contact: Mr. Steve Hall  
Project: Project No. 4500000347

Report Date: July 27, 2012

Client Sample ID: 12060079  
Sample ID: 308397004

Project: ECOL00801  
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Volatile Organics</b>										
<i>5035/8260B TCL in Solid "As Received"</i>										
trans-1,3-Dichloropropylene	U	ND	0.893	ug/kg	1					

**The following Prep Methods were performed**

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	JEB	07/24/12	1431	1232782

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "As Received"	43.3 ug/kg	50.0	97.0	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "As Received"	53.7 ug/kg	50.0	120	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "As Received"	48.9 ug/kg	50.0	110	(80%-120%)

**The Following NCRs have been identified**

NCR ID:1104042 Batch ID: 1232783 1. Samples 308397003 and 308397004 did not pass surrogate recoveries.

2. Samples 308397003 and 308397004 did not have acceptable internal standard responses.

MW  
8-6-12